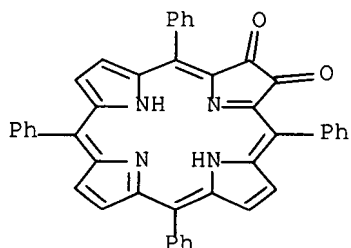


IT 350594-82-0

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reactant, synthesis of rigid covalently **linked** bis-porphyrin  
 systems for studying long-range electron transfer and energy transfer  
 processes)

RN 350594-82-0 HCAPLUS

CN 21H,23H-Porphine-7,8-dione, 5,10,15,20-tetraphenyl- (CA INDEX NAME)



L57 ANSWER 17 OF 20 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1994:54374 HCAPLUS Full-text

DOCUMENT NUMBER: 120:54374

TITLE: Influence of solvent dynamics of inverted region  
 electron transfer of cofacial porphyrin-porphyrin and  
 porphyrin-chlorin complexes

AUTHOR(S): Zaleski, Jeffrey M.; Chang, Chi K.; Nocera, Daniel G.  
 CORPORATE SOURCE: Dep. Chem., Michigan State Univ., East Lansing, MI,  
 48824, USA

SOURCE: Journal of Physical Chemistry (1993), 97(50), 13206-15  
 CODEN: JPCHAX; ISSN: 0022-3654

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 05 Feb 1994

AB The charge recombination (CR) kinetics of cofacially **linked** porphyrin-porphyrin and porphyrin-chlorin ion pairs in a variety of solvents (acetates, nitriles, dichloromethane, acetone, DMF, and selected alcs.) have been investigated by picosecond transient absorption spectroscopy. The ion pairs of a magnesium/free base diporphyrin (Mg-H<sub>2</sub>), zinc porphyrin/free base dicyanomethide chlorin [Zn-H<sub>2</sub>(:C(CN)<sub>2</sub>)], and zinc porphyrin/Cu(II) dicyanomethide chlorin [Zn-Cu(:C(CN)<sub>2</sub>)] are produced from a  $\pi\pi^*$  excited state of the heterodimers within 6 ps of excitation. For a zinc porphyrin/free base ketochlorin (Zn-H<sub>2</sub>(:O)), an ion pair intermediate was observed only in CH<sub>2</sub>Cl<sub>2</sub>. In each case, the ion pair is clearly distinguished in the transient absorption spectrum, which is a composite of the resp. radical cation and anion absorption profiles. Consistent with electrochem. and steady-state spectral data, the energetically favored charge-separated species were Mg<sup>+</sup>-H<sub>2</sub><sup>-</sup>, Zn<sup>+</sup>-H<sub>2</sub>(:O)<sup>-</sup>, Zn<sup>+</sup>-H<sub>2</sub>(:C(CN)<sub>2</sub>)<sup>-</sup>, and Zn<sup>+</sup>-Cu(:C(CN)<sub>2</sub>)<sup>-</sup>. Charge recombination occurs in the Marcus inverted region, and as expected, the rate constant of the more highly inverted Mg<sup>+</sup>-H<sub>2</sub><sup>-</sup> charge recombination ( $\Delta G_{CR} = -1.9$  V) is slower than that of Zn<sup>+</sup>-H<sub>2</sub>(:C(CN)<sub>2</sub>)<sup>-</sup> or Zn<sup>+</sup>-Cu(:C(CN)<sub>2</sub>)<sup>-</sup> charge recombinations ( $\Delta G_{CR} = -1.6$  V). The authors find that the observed CR rate consts. (k<sub>obs</sub>(CR)) are strongly solvent dependent for all systems. The solvent dependence of CR finds its origins in dynamics effects, with the overall rates for CR being dominated by a diffusional activation barrier. The kinetics of the charge recombination of the heterodimers in the various solvent systems

are self-consistent within the framework of theor. predictions for solvent-controlled adiabatic electron-transfer reactions.

IT 152070-03-6

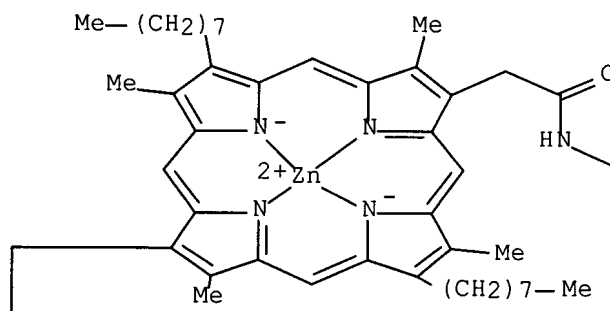
RL: RCT (Reactant); RACT (Reactant or reagent)

(charge recombination of excited ion pairs of, kinetics of)

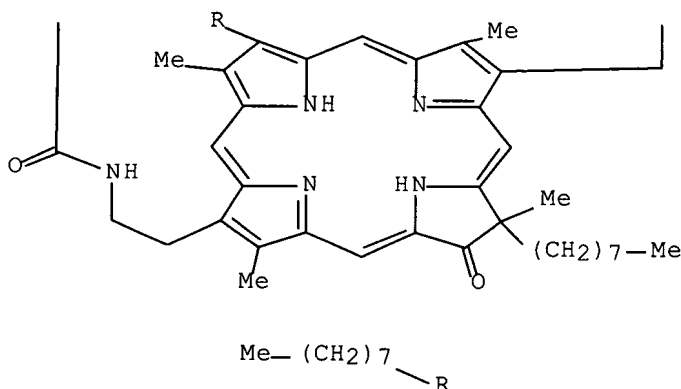
RN 152070-03-6 HCAPLUS

CN Zinc, [7,8,23,24-tetrahydro-3,15,21,34,38,44,50,54-octamethyl-15,33,43,51-tetraoctyl-4H,22H,41H,48H-14,17:32,35-diimino-12,9:30,27-dimetheno-2,28:10,20-bis(metheno[2,5]-endo-pyrrolometheno)dipyrrolo[3,2-i:3',2'-z][1,6,18,23]tetraazacyclotetratriacontine-5,16,25(6H,15H,26H)-trionato(2-)-N1,N29,N37,N41]-, (SP-4-2)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



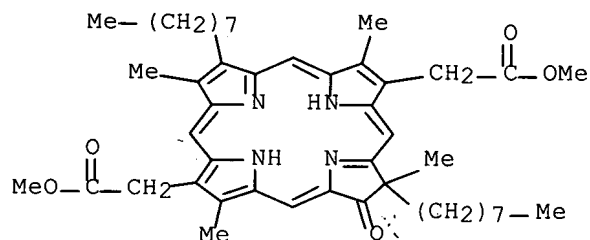
IT 151362-56-0P 151860-89-8P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and complexation of)

RN 151362-56-0 HCAPLUS

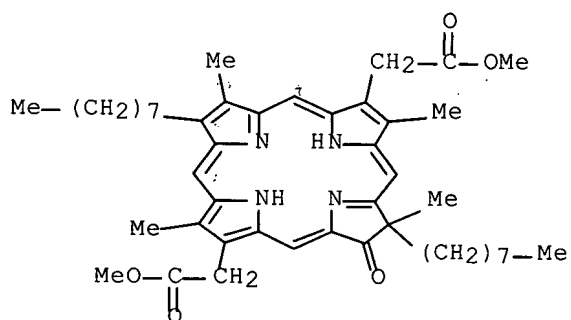
Serial No.: 10/760,968

CN 21H,23H-Porphine-2,12-diacetic acid, 7,8-dihydro-3,8,13,18-tetramethyl-8,17-dioctyl-7-oxo-, dimethyl ester (9CI) (CA INDEX NAME)



RN 151860-89-8 HCAPLUS

CN 21H,23H-Porphine-2,12-diacetic acid, 7,8-dihydro-3,7,13,18-tetramethyl-7,17-dioctyl-8-oxo-, dimethyl ester (9CI) (CA INDEX NAME)

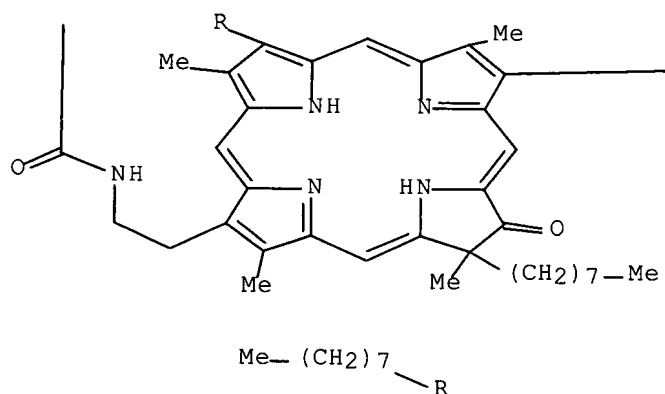
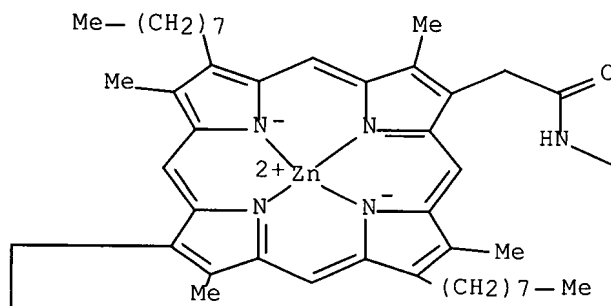


IT 152070-06-9P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 152070-06-9 HCAPLUS

CN Zinc, [7,8,23,24-tetrahydro-3,16,21,34,38,44,50,54-octamethyl-16,33,43,51-tetraoctyl-4H,22H,41H,48H-14,17:32,35-diimino-12,9:30,27-dimetheno-2,28:10,20-bis(metheno[2,5]-endo-pyrrolometheno)dipyrrolo[3,2-i:3',2'-z][1,6,18,23]tetraazacyclotetratriacontine-5,15,25(6H,16H,26H)-trionato(2-)-N1,N29,N37,N41]-, (SP-4-2)- (9CI) (CA INDEX NAME)



✓ L57 ANSWER 18 OF 20 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1993:681913 HCAPLUS Full-text  
 DOCUMENT NUMBER: 119:281913  
 TITLE: Dynamic solvent effects in inverted region electron transfer  
 AUTHOR(S): Zaleski, Jeffrey M.; Wu, Weishi; Chang, Chi K.; Leroi, George E.; Cukier, Robert I.; Nocera, Daniel G.  
 CORPORATE SOURCE: Contribution from the Department of Chemistry and the LASER Laboratory, Michigan State University, East Lansing, MI, 48824, USA  
 SOURCE: Chemical Physics (1993), 176(2-3), 483-91  
 CODEN: CMPHC2; ISSN: 0301-0104  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 ED Entered STN: 25 Dec 1993

849509

AB The solvent dependence of the charge recombination (CR) electron transfer rate consts. of cofacially **linked** magnesium/free base diporphyrin (Mg-H2) and zinc porphyrin/modified free base chlorin (Zn-H2(:C(CN)2)) complexes was investigated by picosecond transient absorption spectroscopy. The photogenerated Mg<sup>+</sup>-H-2 and Zn<sup>+</sup>-H2(:C(CN)2)- charge separated pairs undergo facile reaction in the Marcus inverted region to produce ground state species, with the latter exhibiting faster reaction rates owing to less activated CR. The authors find that the CR rate consts.  $k_{\text{obs}}(\text{CR})$  are strongly solvent dependent in a homologous series of nitriles and acetates. Although they are slow with respect to solvent motion ( $k_{\text{kobs}}(\text{Mg}^+-\text{H}-2) = (0.6-4.0) + 109 \text{ s}^{-1}$ ;  $k_{\text{obs}}(\text{Zn}^+-\text{H}_2(:\text{C}(\text{CN})_2)- = (1.6-8.3) + 1010 \text{ s}^{-1}$ ), a linear correlation is observed between  $k_{\text{obs}}(\text{CR})$  and the inverse of the solvent relaxation time ( $1/\tau_s = (1.5-9.1) + 1011 \text{ s}^{-1}$ ). For the Mg<sup>+</sup>-H-2 cofacial pair this correlation is observed only when solvents of the same series are considered, whereas for Zn<sup>+</sup>-H2(:C(CN)2)- this linear correlation is independent of the solvent series. These observations are analyzed within the context of recent theor. predictions for solvent-controlled adiabatic electron transfer reactions.

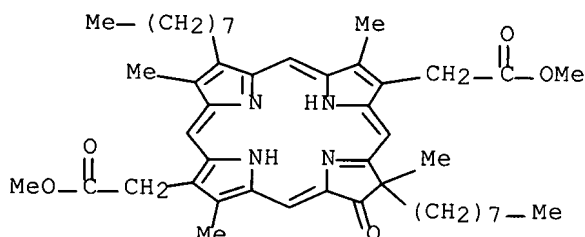
IT 151362-56-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and reaction of)

RN 151362-56-0 HCAPLUS

CN 21H,23H-Porphine-2,12-diacetic acid, 7,8-dihydro-3,8,13,18-tetramethyl-8,17-dioctyl-7-oxo-, dimethyl ester (9CI) (CA INDEX NAME)

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L57 ANSWER 19 OF 20 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1991:445228 HCAPLUS Full-text

DOCUMENT NUMBER: 115:45228

TITLE: Photosensitization by synthetic diporphyrins and dichlorins in vivo and in vitro

AUTHOR(S): Kessel, David; Dougherty, T. J.; Chang, C. K.

CORPORATE SOURCE: Sch. Med., Wayne State Univ., Detroit, MI, 48201, USA

SOURCE: Photochemistry and Photobiology (1991), 53(4), 475-9

CODEN: PHCBAP; ISSN: 0031-8655

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 10 Aug 1991

AB A group of polycarboxylic diporphyrins, 2 dichlorins, and a porphyrin-chlorin dimer, with rings **linked** by methylene groups, were examined to help identify structure which can mediate photodynamic tumor eradication in vivo. Among the features sought were short persistence of normal tissue photosensitization and substantial absorbance at wavelengths >630 nm. Both objectives were achieved, with pertinent structure-activity relations partly characterized. The relative hydrophobicity of the different sensitizers was an important determinant of their accumulation in cell culture, but not of in vivo